



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,136	08/22/2005	Andreas Detlefsen	14219-094US1 P2003 0048 U	7728
26161	7590	08/27/2009		
FISH & RICHARDSON PC				
P.O. BOX 1022				
MINNEAPOLIS, MN 55440-1022				
EXAMINER				
WONG, ALAN				
ART UNIT		PAPER NUMBER		
2817				
NOTIFICATION DATE		DELIVERY MODE		
08/27/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/544,136

Applicant(s)

DETLEFSEN ET AL.

Examiner

ALAN WONG

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-32 and 34-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40 is/are allowed.
- 6) ☒ Claim(s) 21-32, 34-39, 41 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 6/26/09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 21-32, 34-38, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mita et al. JP2001-292050 in view of Bauer et al. WO03/081773, both of record. Please refer back to the office action mailed on 3/18/2009 (which referred to office action mailed on 9/19/2008 from page 2 to page 8) for the details of this rejection.
3. Claim 21-24, 26, 28, 29, 31, 32, 34, 35, 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mita et al. JP2001-292050 in view of Davenport US 5,486,800, both of record. Please refer back to the office action mailed on 3/18/2009 for the details of this rejection.
4. Claim 39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strauss et al. US 6,081,172 in view of Baier DE10007178, both of record.

The US publication US2003/0174029 is referenced as a translation for the DE10007178 reference.

5. With respect to claim 42, Strauss/Baier combination disclosed the apparatus as detailed on office action mailed on 3/18/2009. Regarding the new limitation, the first electrical port (Strauss: INPUT, Fig. 5) comprising an asymmetrical electrical port (the

port as shown on Fig. 5 can be INPUT and GROUND for IDT3, thus providing asymmetrical electrical port).

6. With respect to claim 39, Strauss et al. disclose an apparatus (Fig. 5) comprising: inherently a piezoelectric substrate (Col. 2 line 43-44, Col. 3 line 1-2, inherent to SAW resonators/filters) comprising: a signal line comprising a first (INPUT) and second (OUTPUT) electrical port, the first electrical port comprising an asymmetrical electrical port (the port as shown on Fig. 5 can be INPUT and GROUND for IDT3, thus providing asymmetrical electrical port); a first partial filter (RES1a,b; "partial filter" is read as a name only); a second partial filter (the single track filter at the top) electrically connected in series with the first partial filter (RES1a,b), the first and second partial filters being between the first (INPUT) and second (OUTPUT) electrical ports; wherein: the first partial filter (RES1a,b) comprises a first (RES1a) and second (RES1 b) serial transducers in series branches of the signal line; the second partial filter comprises a first coupler (IDT4), a second coupler (IDT2), and an end-positioned transducer (IDT3) that are in DMS path (the 3-IDT structure, IDT2-IDT4, is well known recognized DMS structure (see other art of record; also mentioned in the rejection of claim 42 in prior office action), the end- positioned transducer (IDT3) being positioned at an end of the signal line (since the IDT3 is connected directly to the input, this is being considered as "end" of signal line (i.e. line has two ends: the beginning end and the terminating end) so that the IDT3 is "end-positioned"); a first signal conducting terminal (sym. OUTPUT, right side) of the second electrical port is electrically connected to the first serial transducer (RES1a); a second signal conducting terminal (sym. OUTPUT, left side) of

the second electrical port is electrically connected to the second serial transducer (RES1b); the end-positioned transducer (IDT3) is arranged along the signal line that is electrically connected to the first electrical port (INPUT); the first coupler transducer (IDT4) is electrically connected in series with the first serial transducer (RES1a); the second coupler transducer (IDT2) is electrically connected in series with the second serial transducer (RES1b).

Strauss et al. do not disclose the first (RES1a) and second (RES1b) serial transducers being in an acoustic path and acoustically coupled with one another.

Baier et al. disclose a four-pole reactance element (Fig. 2) with two transducer (T1, T2) being in an acoustic path and acoustically coupled with one another.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Baier et al.'s four-pole reactance element (Baier: Fig. 2) in place of Strauss et al.'s serial transducers (Strauss: RES1a,b). Since Strauss et al.'s serial transducers (Strauss: RES1a,b shown schematically in Fig. 7 therein) are essentially the same as Baier et al.'s four-pole reactance shown on Fig. 1 (Baier), thus they can be replaced by Baier et al.'s four-pole reactance element (Fig. 2) because Baier et al.'s Fig. 2 are art recognized alternative for Fig. 1 (suggested by Baier's claim 1: both Fig. 1 and Fig. 2 are called four pole reactance element VS) that achieve similar end results as well known to one of ordinary skill in the art.

Response to Arguments

7. Applicant's arguments filed 6/17/2009 have been fully considered but they are not persuasive.
8. Applicant's amendment for claim 40 to overcome rejection under 35 USC § 112 is persuasive, and thus this grounds of rejection is withdrawn.
9. Applicant's amendment with respect to claim 39 have been considered. While Examiner agrees Baier does not disclose asymmetrical port. However, Baier discloses four-pole reactance element (Fig. 1, 2), which are balanced-to-balanced connection that can be use view of the new ground(s) of rejection. Examiner uses Baier to modify Strauss' RES1a,b, which are balanced-to-balanced connection, thus Applicant's argument on modifying/combining Baier with asymmetrical port does not apply to the new combination above.
10. Applicant's amendment for claim 40 to overcome rejection under 35 USC§102(b) is persuasive, and thus this grounds of rejection is withdrawn.
11. Applicant's argument over Mita et al. JP2001-292050 in view of Bauer et al. WO03/081773 and Mita et al. JP2001-292050 in view of Davenport US5,486,800 are not persuasive.

On Page 3 of the Remark, Applicant states: "The Examiner concedes that Mita does not disclose that a first partial filter comprises a first serial transducer and a second serial transducer in series branches of the signal line, the first serial transducer and the second serial transducer being in an acoustic path and acoustically coupled with one another." Examiner disagrees with the part on "Mita does not disclose that a

first partial filter comprises a first serial transducer and a second serial transducer in series branches of the signal line" as Mita discloses on Fig. 11 with two serial transducers in the ladder portion (Mita: 137). Examiner agrees with Mita does not disclose "the first serial transducer and second serial transducer being in an acoustic path and acoustically coupled with one another".

Applicant states on Page 4-5 that both Bauer and Davenport refer to ladder type filter and have objectives to reduce size and achieve low insertion loss. Applicant argues that "it would be contrary to both Bauer and Davenport to combine these SAW filter structures in series with a DMS filter structure" (Page 5 of remark) as such combination would increase both aerial consumption and insertion loss. This, however, is **not** the combination in the rejection. **Examiner is replacing Mita's ladder filter portion with Bauer/Davenport in the combination, not modify or adding to the filter structure of Bauer or Davenport as argued by the Applicant**, therefore, argument over whether DMS filter cannot be added to SAW filter of Bauer or Davenport is not persuasive to overcome the rejection.

On Page 6 of the Remark, Applicant states: "Furthermore, acoustically coupling the first and the second serial transducer of the first partial filter in Mita would serve no purpose, as the filter structure shown in figure 11 already comprises acoustically coupled transducers in the DMS filter." Examiner disagrees. With Mita's ladder filter portion replaced by Bauer or Davenport, **the whole filter would be smaller in size since the ladder portion is smaller** (Applicant mentioned in Page 5 of the Remark) **regardless of whether Mita already comprises acoustically coupled transducer in**

the DMS filter and also the reasons stated in the prior office action (which are reproduced on Page 4 of the Remark).

12. There is no argument on the rejection of claim 42 based on Strauss et al. US 6,081,172 in view of Baier DE10007178 and the amendment of claim 42 does not overcome the rejection under 35 U.S.C. 103(a) as being unpatentable over Strauss et al. US 6,081,172 in view of Baier DE10007178. See rejection above.

Allowable Subject Matter

13. Claim 40 is allowed.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection (claim 39) presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN WONG whose telephone number is (571)272-3238. The examiner can normally be reached on Mon-Thurs 9:30am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/BENNY LEE/
PRIMARY EXAMINER
ART UNIT 2817**

AW